

**AMENDMENTS TO THE SPECIFICATION:**

Please add the following *new* paragraph on page 1, between lines 2 and 3:

**CROSS-REFERENCE TO RELATED APPLICATIONS**

This U.S. National stage application claims priority under 35 U.S.C. §119(a) to Japanese Patent Application No. 2004-120548, filed in Japan on April 15, 2004 the entire contents of which are hereby incorporated herein by reference.

Please replace the paragraph beginning at page 1, line 9 with the following rewritten version:

Incidentally, among such joints, a joint of which the connection portion can be sealed by deforming a metal gasket, such as a copper gasket is well known among persons skilled in the art (for example, refer to ~~Patent Document 1~~Japanese Patent Publication No. 2002-276866).

Please replace the paragraph beginning at page 1, line 15 with the following rewritten version:

The push rod 12 comprises a contact part 12a, a first passageway Pc11, and a second passageway Pc12. The contact part 12a is provided at one end part of the push rod in the push rod longitudinal direction X. In addition, this contact part 12a is provided with a contact tapered part 12b. Furthermore, as is clear from FIG. 1(a), this contact tapered part 12b is provided at an end part of the contact part 12a on a push rod protruding side X1 in the push rod longitudinal direction X so that it surrounds the first passageway Pc11. In addition, the contact tapered part 12b is inclined toward the outer circumference and toward the opposite side X2 of the push rod protruding side in the push rod longitudinal direction X. Furthermore, when a male thread part 14 and a female thread part 22 of a pressure sensor connecting nut 20 depicted in FIG. 1(b) are screwed together in a state wherein the push rod 12 is housed in a

push rod storage space SPc of the main body 11 which is discussed later, then the contact tapered part 12b contacts a nut tapered part 21 of the pressure sensor connecting nut 20 (refer to FIG. 1(b) and FIG. 1(c)). In addition, the end part of the push rod 12 on the opposite side X2 of the push rod protruding side in the push rod longitudinal direction X contacts the steel ball 15. Furthermore, the push rod 12 and the steel ball 15 is urged toward the push rod protruding side X1 in the push rod longitudinal direction X by a spring 16. Namely, when an external force is applied from ~~the opposite side X2~~ of the push rod protruding side X1 in the push rod longitudinal direction X, the push rod 12 is capable of moving along the push rod longitudinal direction X toward the opposite side X2 of the push rod protruding side. The first passageway Pc11 is formed along the push rod longitudinal direction X. In addition, the second passageway Pc12 is formed along a direction perpendicular to the push rod longitudinal direction X. Furthermore, the first passageway Pc11 and the second passageway Pc12 are in communication and form a first transit path Pc1.

Please remove the paragraph beginning at page 4, line 2 as follows:

~~<PATENT DOCUMENT 1> Japanese Published Patent Application No. 2002-276866~~

Please replace the heading at page 4, line 3, with the following rewritten version:

SUMMARY OF THE INVENTION ~~DISCLOSURE OF THE INVENTION~~

Please remove the heading at page 4, line 3 as follows:

~~PROBLEMS SOLVED BY THE INVENTION~~

Please remove the heading at page 4, line 15 as follows:

~~MEANS FOR SOLVING THE PROBLEMS~~

Please replace the paragraph beginning at page 4, line 16 with the following rewritten version:

A joint according to ~~the~~ a first aspect of the present invention is a joint for bringing into communication: a first fluid passageway; and a second fluid passageway of a nut member which comprises the second fluid passageway, a female thread part, and a first tapered part; and comprising a push rod and a main body. Furthermore, a fluid passes through the first fluid passageway. In addition, the first tapered part is inclined toward the outer circumferential side and toward the female thread part side. The main body comprises a push rod storage space, a communication path, a seal structure forming part, and a male thread part. The push rod storage space houses the push rod so that one part of the push rod protrudes along a push rod longitudinal direction. The communication path is a passageway for communicating with the first fluid passageway. Furthermore, this communication path is provided in the main body on an opposite side of a push rod protruding side of the push rod storage space in the push rod longitudinal direction. The seal structure forming part is provided at an end part of the main body on a push rod protruding side in the push rod longitudinal direction so that it surrounds the outer circumference of the push rod storage space. Furthermore, this seal structure forming part is capable of forming a seal structure by contacting the first tapered part. The male thread part is capable of screwing together with the female thread part along the push rod longitudinal direction. Furthermore, when the female thread part and the male thread part are screwed together, then the seal structure forming part contacts the first tapered part. In addition, one part of the portion of the push rod protruding from the push rod storage space contacts one part of the nut member, the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the second fluid passageway and the communication path.

Please replace the paragraph beginning at page 5, line 20 with the following rewritten version:

A joint according to ~~the~~ a second aspect of the present invention is a joint according to the first aspect of the present invention, wherein the seal structure forming part is a second tapered part. The second tapered part is inclined toward the outer circumferential side and toward the opposite side of the push rod protruding side in the push rod longitudinal direction.

Please replace the paragraph beginning at page 5, line 28 with the following rewritten version:

A joint according to ~~the~~ a third aspect of the present invention is a joint according to the second aspect of the present invention, wherein an angle formed by an inclination direction of the second tapered part with the push rod longitudinal direction is less than or equal to an angle formed by an inclination direction of the first tapered part with the push rod longitudinal direction in a state wherein the female thread part and the male thread part are screwed together.

Please replace the paragraph beginning at page 6, line 9 with the following rewritten version:

A joint according to ~~the~~ a fourth aspect of the present invention is a joint according to the second aspect of the present invention or the third aspect of the present invention, wherein the second tapered part is provided with a first projection part. The first projection part projects toward the outer circumferential side. Furthermore, the first projection part forms a seal structure by contacting the first tapered part and deforming.

Please replace the paragraph beginning at page 6, line 16 with the following rewritten version:

A joint according to ~~the~~ a fifth aspect of the present invention is a joint according to the first aspect of the present invention, wherein the seal structure forming part is a convex spherical surface part.

Please replace the paragraph beginning at page 6, line 22 with the following rewritten version:

A joint according to ~~the~~ a sixth aspect of the present invention is a joint according to any one ~~invention~~ of the first ~~invention~~ through the fifth aspects of the present invention, wherein the seal structure forming part comprises a sealing member as a separate body. Furthermore, the sealing member forms a seal structure by contacting the first tapered part and deforming.

Please replace the paragraph beginning at page 6, line 32 with the following rewritten version:

A joint according to ~~the~~ a seventh aspect of the present invention is a joint according to the sixth aspect of the present invention, wherein the seal structure forming part further comprises a groove for supporting the sealing member.

Please replace the paragraph beginning at page 7, line 4 with the following rewritten version:

A joint according to ~~the~~ an eighth aspect of the present invention is a joint according to any one ~~invention~~ of the first ~~invention~~ through the seventh aspects of the present invention, wherein the push rod comprises a second projection part at the portion protruding from the push rod storage space. The second projection part projects toward the outer circumferential side of the push rod. Furthermore, the second projection part preferably is wider than the maximum passageway width of the second fluid passageway. Furthermore, when the female thread part and the male thread part are screwed together, then the second projection part contacts the first tapered part, and the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the second fluid passageway and the communication path.

Please replace the paragraph beginning at page 7, line 24 with the following rewritten version:

A joint according to ~~the~~ a ninth aspect of the present invention is a joint according to the eighth aspect of the present invention, wherein the second projection part comprises a third tapered part. The third tapered part is inclined toward the outer circumferential side and toward the opposite side of the push rod protruding side in the push rod longitudinal direction. Furthermore, when the female thread part and the male thread part are screwed together, then the third tapered part of the push rod contacts the first tapered part, and the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction and brings into communication the second fluid passageway and the communication path.

Please replace the paragraph beginning at page 8, line 7 with the following rewritten version:

A joint according to ~~the~~ a tenth aspect of the present invention is a joint according to any one ~~invention~~ of the first ~~invention~~ through the seventh aspects of the present invention, wherein the push rod comprises a fourth tapered part. The fourth tapered part is provided at the end part of the push rod on the push rod protruding side in the push rod longitudinal direction. In addition, the fourth tapered part is inclined toward the outer circumferential side and toward the opposite side of the push rod protruding side in the push rod longitudinal direction. Furthermore, when the female thread part and the male thread part are screwed together, then the fourth tapered part contacts the first tapered part, and the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the second fluid passageway and the communication path.



Please replace the paragraph beginning at page 8, line 17 with the following rewritten version:

Here, the fourth tapered part is provided at the end part of the push rod on the push rod protruding side in the push rod longitudinal direction. Consequently, with this joint, if the end part of the push rod on the push rod protruding side in the push rod longitudinal direction contacts the tapered part of the nut member, and the like, then it is possible to achieve a satisfactory seal state between the end part thereof and the nut member. In addition, if the angle formed by the inclination direction of the fourth tapered part with the push rod longitudinal direction is less than or equal to the angle formed by the inclination direction of the tapered part of the nut member with the push rod longitudinal direction in a state wherein the female thread part and the male thread part are screwed together, then it is possible to achieve a more satisfactory seal state between the end part thereof and the nut member.

Please replace the paragraph beginning at page 8, line 27 with the following rewritten version:

A joint according to ~~the~~ an eleventh aspect of the present invention is a joint for bringing into communication: a third fluid passageway; and a fourth fluid passageway of a piping, which comprises the fourth fluid passageway and a fifth tapered part; and comprising a push rod, a main body, and a nut member. A fluid passes through the third fluid passageway. The fifth tapered part is inclined toward the radial direction of the piping and toward the end part. The main body comprises a push rod storage space, a communication path, a seal structure forming part, and a male thread part. The push rod storage space houses the push rod so that one part of the push rod protrudes along a push rod longitudinal direction. The communication path is a passageway for communicating with the third fluid passageway. Furthermore, this communication path is provided in the main body on an opposite side of a push rod protruding side of the push rod storage space in the push rod longitudinal direction. The seal structure forming part is provided at an end part on a push rod protruding side in the push rod longitudinal direction so that it surrounds the outer circumference of the push rod storage space. Furthermore, this seal structure forming part is capable of forming a seal

structure by contacting the fifth tapered part. The nut member comprises a female thread part, an opening, and a sixth tapered part. The female thread part is capable of screwing together with the male thread part along the push rod longitudinal direction. The opening is provided for inserting the piping. The sixth tapered part is inclined toward the outer circumferential side and toward the female thread part. Furthermore, when the female thread part and the male thread part are screwed together in a state wherein the piping is inserted into the opening so that the fifth tapered part contacts the sixth tapered part, then the seal structure forming part and the sixth tapered part sandwich and press one part of the fifth tapered part. In addition, the end part of the push rod on the push rod protruding side contacts another part of the fifth tapered part, the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the fourth fluid passageway and the communication path.

Please replace the paragraph beginning at page 8, line 27 with the following rewritten version:

A joint according to the eleventh invention is a joint for bringing into communication: a third fluid passageway; and a fourth fluid passageway of a piping, which comprises the fourth fluid passageway and a fifth tapered part; and comprising a push rod, a main body, and a nut member. A fluid passes through the third fluid passageway. The fifth tapered part is inclined toward the radial direction of the piping and toward the end part. The main body comprises a push rod storage space, a communication path, a seal structure forming part, and a male thread part. The push rod storage space houses the push rod so that one part of the push rod protrudes along a push rod longitudinal direction. The communication path is a passageway for communicating with the third fluid passageway. Furthermore, this communication path is provided in the main body on an opposite side of a push rod protruding side of the push rod storage space in the push rod longitudinal direction. The seal structure forming part is provided at an end part of the main body on a push rod protruding side in the push rod longitudinal direction so that it surrounds the outer circumference of the push rod storage space. Furthermore, this seal structure forming part is capable of forming a



seal structure by contacting the fifth tapered part. The nut member comprises a female thread part, an opening, and a sixth tapered part. The female thread part is capable of screwing together with the male thread part along the push rod longitudinal direction. The opening is provided for inserting the piping. The sixth tapered part is inclined toward the outer circumferential side and toward the female thread part. Furthermore, when the female thread part and the male thread part are screwed together in a state wherein the piping is inserted into the opening so that the fifth tapered part contacts the sixth tapered part, then the seal structure forming part and the sixth tapered part sandwich and press one part of the fifth tapered part. In addition, the end part of the push rod on the push rod protruding side contacts another part of the fifth tapered part, the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the fourth fluid passageway and the communication path.

Please replace the paragraph beginning at page 10, line 2 with the following rewritten version:

A joint according to ~~the~~ a twelfth aspect of the present invention is a joint according to the eleventh aspect of the present invention, wherein the seal structure forming part is a seventh tapered part. The seventh tapered part is inclined toward the outer circumferential side and toward the opposite side of the push rod protruding side in the push rod longitudinal direction.

Please replace the paragraph beginning at page 10, line 10 with the following rewritten version:

A joint according to ~~the~~ a thirteenth aspect of the present invention is a joint according to the twelfth aspect of the present invention, wherein an angle formed by an inclination direction of the seventh tapered part with the push rod longitudinal direction is less than or equal to an angle formed by an inclination direction of the sixth tapered part with

the push rod longitudinal direction in a state wherein the female thread part and the male thread part are screwed together.

Please replace the paragraph beginning at page 10, line 25 with the following rewritten version:

A joint according to ~~the~~ a fourteenth aspect of the present invention is a joint according to the twelfth ~~invention~~ or the thirteenth aspect of the present invention, wherein the seventh tapered part is provided with a third projection part. The third projection part projects toward the outer circumferential side. Furthermore, the third projection part forms a seal structure by contacting the fifth tapered part.

Please replace the paragraph beginning at page 10, line 33 with the following rewritten version:

A joint according to ~~the~~ a fifteenth aspect of the present invention is a joint according to the eleventh aspect of the present invention, wherein the seal structure forming part is a convex spherical surface part.

Please replace the paragraph beginning at page 11, line 5 with the following rewritten version:

A joint according to ~~the~~ a sixteenth aspect of the present invention is a joint according to any one ~~invention~~ of the eleventh ~~invention~~ through the fifteenth aspects of the present invention, wherein the seal structure forming part comprises a sealing member as a separate body. Furthermore, the sealing member forms a seal structure by contacting the fifth tapered part and deforming.

Please replace the paragraph beginning at page 11, line 15 with the following rewritten version:

A joint according to ~~the~~ a seventeenth aspect of the present invention is a joint according to the sixteenth aspect of the present invention, wherein the seal structure forming part further comprises a groove for supporting the sealing member.

Please replace the paragraph beginning at page 11, line 21 with the following rewritten version:

A joint according to ~~the~~ an eighteenth invention is a joint according to any one ~~invention~~ of the eleventh ~~invention~~ through the seventeenth aspects of the present invention, wherein the push rod comprises a fourth projection part at the portion protruding from the push rod storage space. The fourth projection part projects toward the outer circumferential side of the push rod. Furthermore, the fourth projection part preferably is wider than the maximum passageway width of the fourth fluid passageway. Furthermore, when the female thread part and the male thread part are screwed together in a state wherein the piping is inserted into the opening so that the fifth tapered part contacts the sixth tapered part, then the fourth projection part contacts another part of the fifth tapered part, and the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the fourth fluid passageway and the communication path.

Please replace the paragraph beginning at page 12, line 8 with the following rewritten version:

A joint according to ~~the~~ a nineteenth aspect of the present invention is a joint according to the eighteenth aspect of the present invention, wherein the fourth projection part comprises an eighth tapered part. The eighth tapered part is inclined toward the outer circumferential side and toward the opposite side of the push rod protruding side in the push rod longitudinal direction. Furthermore, when the female thread part and the male thread part are screwed together in a state wherein the piping is inserted into the opening so that the fifth tapered part contacts the sixth tapered part, then the eighth tapered part of the push rod

contacts another part of the fifth tapered part, and the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction and brings into communication the fourth fluid passageway and the communication path.

Please replace the paragraph beginning at page 12, line 27 with the following rewritten version:

A joint according to ~~the~~ a twentieth aspect of the present invention is a joint according to any one ~~invention~~ of the eleventh ~~invention~~ through the seventeenth aspects of the present invention, wherein the push rod comprises a ninth tapered part. The ninth tapered part is provided at the end part of the push rod on the push rod protruding side in the push rod longitudinal direction. In addition, the ninth tapered part is inclined toward the outer circumferential side and toward the opposite side of the push rod protruding side in the push rod longitudinal direction. Furthermore, when the female thread part and the male thread part are screwed together in a state wherein the piping is inserted into the opening so that the fifth tapered part contacts the sixth tapered part, then the ninth tapered part contacts another part of the fifth tapered part, and the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the fourth fluid passageway and the communication path.

Please replace the paragraph beginning at page 13, line 4 with the following rewritten version:

Here, the ninth tapered part is provided at the end part of the push rod on the push rod protruding side in the push rod longitudinal direction. Consequently, with this joint, if the end part of the push rod on the push rod protruding side in the push rod longitudinal direction contacts the tapered part of the piping, then it is possible to achieve a satisfactory seal state between the end part thereof and the piping. In addition, if the angle formed by the inclination direction of the ninth tapered part with the push rod longitudinal direction is less than or equal to the angle formed by the inclination direction of the tapered part of the piping with the push rod longitudinal direction in a state wherein the female thread part and the male

thread part are screwed together, then it is possible to achieve a more satisfactory seal state between the end part thereof, the nut member, the piping, and the like.

Please replace the paragraph beginning at page 13, line 15 with the following rewritten version:

With the joint according to the first aspect of the present invention, the main body and the nut member can be sealed with a low tightening torque.

As a result, with this joint, cracking of the nut member can be prevented. In addition, with this joint, the same as with a conventional joint, one part of the portion of the push rod protruding from the push rod storage space contacts one part of the nut member, the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the second fluid passageway and the communication path. Consequently, with this joint as well, if the communication path and the first fluid passageway are brought into communication by a technique such as braising prior to screwing together the female thread part and the male thread part, then the fluid flowing to one fluid passageway can flow to another fluid passageway, the same as with a conventional joint.

Please replace the paragraph beginning at page 13, line 27 with the following rewritten version:

With the joint according to the second aspect of the present invention, with this joint, the seal structure forming part is capable of forming the seal structure by surface contact with the first tapered part. Accordingly, with this joint, it is possible to form a satisfactory seal structure.

Please replace the paragraph beginning at page 13, line 30 with the following rewritten version:



With the joint according to the third aspect of the present invention, when the female thread part and the male thread part are screwed together, then the entire surface of the second tapered part can contact the entire surface of the first tapered part, or the push rod protruding side of the second tapered part in the push rod longitudinal direction can contact the push rod protruding side of the first tapered part in the push rod longitudinal direction. Accordingly, with this joint, a satisfactory seal state between the main body and the nut member can be achieved.

Please replace the paragraph beginning at page 14, line 2 with the following rewritten version:

With the joint according to the fourth aspect of the present invention, it is possible to form a rigid seal structure.

Please replace the paragraph beginning at page 14, line 4 with the following rewritten version:

With the joint according to the fifth aspect of the present invention, the seal structure forming part is capable of forming a seal structure by making line contact with any location on the first tapered part, regardless of the angle of the first tapered part.

Please replace the paragraph beginning at page 14, line 7 with the following rewritten version:

With the joint according to the sixth aspect of the present invention, it is possible to form a rigid seal structure. In addition, with this joint, the sealing member can be arbitrarily replaced. Accordingly, with this joint, the reliability of the seal can be improved when tightening a number of times.

Please replace the paragraph beginning at page 14, line 11 with the following rewritten version:

With the joint according to the seventh aspect of the present invention, it is possible to form a satisfactory seal structure without the risk of the sealing member shifting.

Please replace the paragraph beginning at page 14, line 13 with the following rewritten version:

With the joint according to the eighth aspect of the present invention, it is possible to make a connection even if the cross section spanning the surface orthogonal to the push rod longitudinal direction of the push rod is completely surrounded by the cross section spanning the surface orthogonal to the push rod longitudinal direction of the second fluid passageway in a state wherein the female thread part and the male thread part are screwed together.

Please replace the paragraph beginning at page 14, line 18 with the following rewritten version:

With the joint according to the ninth aspect of the present invention, if the end part of the second projection part on the push rod protruding side in the push rod longitudinal direction contacts the tapered part of the nut member, then it is possible to achieve a satisfactory seal state with the nut member. In addition, if the angle formed by the inclination direction of the third tapered part with the push rod longitudinal direction is less than or equal to the angle formed by the inclination direction of the tapered part of the nut member with the push rod longitudinal direction in a state wherein the female thread part and the male thread part are screwed together, then it is possible to achieve a more satisfactory seal state between the end part thereof and the nut member.

Please replace the paragraph beginning at page 14, line 27 with the following rewritten version:

With the joint according to the tenth aspect of the present invention, if the end part of the push rod on the push rod protruding side in the push rod longitudinal direction contacts the tapered part of the nut member, and the like, then it is possible to achieve a satisfactory seal state between the end part thereof and the nut member. In addition, if the angle formed by the inclination direction of the fourth tapered part with the push rod longitudinal direction is less than or equal to the angle formed by the inclination direction of the tapered part of the nut member with the push rod longitudinal direction in a state wherein the female thread part and the male thread part are screwed together, then it is possible to achieve a more satisfactory seal state between the end part thereof and the nut member.

Please replace the paragraph beginning at page 15, line 2 with the following rewritten version:

With the joint according to the eleventh aspect of the present invention, the main body, the piping, and the nut member can be sealed by the seal structure forming part of the main body and the sixth tapered part of the nut member, without advancing the screwing together until the copper gasket deforms, as in a conventional joint. Accordingly, with this joint, the main body, the piping, and the nut member can be sealed with a low tightening torque. As a result, with this joint, cracking of the nut member can be prevented. In addition, with this joint, the same as with a conventional joint, the end part of the push rod on the push rod protruding side contacts another part of the fifth tapered part, the push rod moves toward the opposite side of the push rod protruding side along the push rod longitudinal direction, and brings into communication the fourth fluid passageway and the communication path. Consequently, with this joint as well, if the communication path and the third fluid passageway are brought into communication by a technique such as braising prior to screwing together the female thread part and the male thread part, then the fluid flowing to one fluid passageway can flow to another fluid passageway, the same as with a conventional joint.

Please replace the paragraph beginning at page 15, line 16 with the following rewritten version:

With the joint according to the twelfth aspect of the present invention, the seal structure forming part is capable of forming the seal structure by surface contact with the fifth tapered part. Accordingly, with this joint, it is possible to form a satisfactory seal structure.

Please replace the paragraph beginning at page 15, line 19 with the following rewritten version:

With the joint according to the thirteenth aspect of the present invention, the fifth tapered part can be sandwiched and pressed by the entire surface of the seventh tapered part and the entire surface of the sixth tapered part, or the fifth tapered part can be sandwiched and pressed by the push rod protruding side of the seventh tapered part in the push rod longitudinal direction and the push rod protruding side of the sixth tapered part in the push rod longitudinal direction. Accordingly, with this joint, a satisfactory seal state between the main body, the piping, and the nut member can be achieved.

Please replace the paragraph beginning at page 15, line 26 with the following rewritten version:

With the joint according to the fourteenth aspect of the present invention, it is possible to form a rigid seal structure.

Please replace the paragraph beginning at page 15, line 28 with the following rewritten version:

With the joint according to the fifteenth aspect of the present invention, the seal structure forming part is capable of forming a seal structure by making line contact with any location on the first tapered part, regardless of the angle of the first tapered part.

Please replace the paragraph beginning at page 15, line 31 with the following rewritten version:

With the joint according to the sixteenth aspect of the present invention, it is possible to form a rigid seal structure. In addition, with this joint, the sealing member can be arbitrarily replaced. Accordingly, with this joint, the reliability of the seal can be improved when tightening a number of times.

Please replace the paragraph beginning at page 16, line 1 with the following rewritten version:

With the joint according to the seventeenth aspect of the present invention, it is possible to form a satisfactory seal structure without the risk of the sealing member shifting.

Please replace the paragraph beginning at page 16, line 3 with the following rewritten version:

With the joint according to the eighteenth aspect of the present invention, it is possible to make a connection even if the cross section spanning the surface orthogonal to the push rod longitudinal direction of the push rod is completely surrounded by the cross section spanning the surface orthogonal to the push rod longitudinal direction of the fourth fluid passageway in a state wherein the female thread part and the male thread part are screwed together.

Please replace the paragraph beginning at page 16, line 8 with the following rewritten version:

With the joint according to the nineteenth aspect of the present invention, if the end part of the fourth projection part on the push rod protruding side in the push rod longitudinal direction contacts the tapered part of the piping, then it is possible to achieve a satisfactory seal state with the piping. In addition, if the angle formed by the inclination direction of the



eighth tapered part with the push rod longitudinal direction is less than or equal to the angle formed by the inclination direction of the tapered part of the piping with the push rod longitudinal direction in a state wherein the female thread part and the male thread part are screwed together, then it is possible to achieve a more satisfactory seal state between the end part thereof and the piping, and the like.

Please replace the paragraph beginning at page 16, line 17 with the following rewritten version:

With the joint according to the twentieth aspect of the present invention, if the end part of the push rod on the push rod protruding side in the push rod longitudinal direction contacts the tapered part of the piping, then it is possible to achieve a satisfactory seal state between the end part thereof and the piping. In addition, if the angle formed by the inclination direction of the ninth tapered part with the push rod longitudinal direction is less than or equal to the angle formed by the inclination direction of the tapered part of the piping with the push rod longitudinal direction in a state wherein the female thread part and the male thread part are screwed together, then it is possible to achieve a more satisfactory seal state between the end part thereof, the nut member, the piping, and the like.

Please remove the heading at page 18, line 2, as follows:

**~~EXPLANATION OF SYMBOLS~~**

Please replace the paragraph beginning at page 18, line 3 with the following rewritten version:

- ~~20 — Pressure sensor connecting nut (nut member)~~
- ~~21 — Nut tapered part (first tapered part)~~
- ~~22, 42 Female thread part~~
- ~~30 — Flared copper pipe (piping)~~

~~31 — Flared part (first tapered part)~~  
~~40 — Flared copper pipe connecting nut (nut member)~~  
~~41 — Nut tapered part (third tapered part)~~  
~~50, 60 — Joints~~  
~~51 — Main body~~  
~~52, 62 — Push rods~~  
~~52a — Projection part~~  
~~52b — Projection tapered part (fifth tapered part)~~  
~~53 — Main body tapered part (second tapered part)~~  
~~54 — Male thread part~~  
~~62c — Push rod tapered part (fourth tapered part)~~  
~~123a, 123b — Projection parts~~  
~~145, 175 — Metal sealings~~  
~~147, 187 — Storage grooves~~  
~~155 — O-ring~~  
~~163 — Convex spherical surface part~~  
~~Pp — Passageway of pressure sensor connecting nut (second fluid passageway)~~  
~~Pf — Passageway of flared copper pipe (second fluid passageway)~~  
~~Pi2 — Second transit path (communication path)~~  
~~SPi — Push rod storage space~~  
~~HL — Opening~~  
~~X — Push rod longitudinal direction~~  
~~X1 — Push rod protruding side~~  
~~X2 — Opposite side of the push rod protruding side~~  
~~Sp — Inclination direction of the nut tapered part of the pressure sensor connecting nut  
(inclination direction of the first tapered part)~~  
~~Sf — Inclination direction of the nut tapered part of the flared copper pipe connecting nut  
(inclination direction of the third tapered part)~~  
~~Si1 — Inclination direction of the main body tapered part (inclination direction of the second  
tapered part)~~

~~b——Angle formed by the inclination direction of the nut tapered part of the pressure sensor connecting nut with the push rod longitudinal direction (angle formed by the inclination direction of the first tapered part with the push rod longitudinal direction)~~

~~g——Angle formed by the inclination direction of the nut tapered part of the flared copper pipe connecting nut with the push rod longitudinal direction (angle formed by the inclination direction of the third tapered part with the push rod longitudinal direction)~~

~~d——Angle formed by the inclination direction of the main body tapered part with the push rod longitudinal direction (angle formed by the inclination direction of the second tapered part with the push rod longitudinal direction)~~

Please replace the heading at page 19, line 12, with the following rewritten version:

~~BEST MODE FOR CARRYING OUT DETAILED DESCRIPTION OF THE~~  
INVENTION

Please replace the paragraph beginning at page 19, line 22 with the following rewritten version:

The projection part 52a is provided at the outer circumference of the push rod 52, and comprises a projection tapered part 52b. Furthermore, the projection tapered part 52b is inclined toward the outer circumferential side and toward an opposite side X2 of a push rod protruding side in a push rod longitudinal direction X. Furthermore, the projection tapered part 52b is formed so that the angle formed by the inclination direction of the projection tapered part 52b with the push rod longitudinal direction X is greater than or equal to a prescribed angle and is less than or equal to the angle formed by the inclination direction of a main body tapered part 53 (discussed later) with the push rod longitudinal direction X. In addition, in a state wherein the push rod 52 is housed in a push rod storage space SPi (discussed later) of the main body 51, the end part of the push rod 52 on the opposite side X2 of the push rod protruding side in the push rod longitudinal direction X contacts the steel ball 55. Furthermore, at this juncture, the push rod 52 and the steel ball 55 is urged toward a push

rod protruding side X1 in the push rod longitudinal direction X by the spring 56. In other words, if an external force is applied from ~~the opposite side X2~~ of the push rod protruding side X1 in the push rod longitudinal direction X, the push rod 52 is capable of moving toward the opposite side X2 of the push rod protruding side along the push rod longitudinal direction X. The first passageway Pi11 is formed along the push rod longitudinal direction X. In addition, the second passageway Pi12 is formed along the direction perpendicular to the push rod longitudinal direction X. Furthermore, the first passageway Pi11 and the second passageway Pi12 are in communication and form a first transit path Pi1.

Please replace the paragraph beginning at page 20, line 9 with the following rewritten version:

The main body 51 comprises the push rod storage space SPi, a male thread part 54, the main body tapered part 53, and a second transit path Pi2. The push rod 52 is housed in the push rod storage space SPi so that one part of the push rod 52 that includes the projection part 52a protrudes externally. Furthermore, the push rod storage space SPi, in a state wherein the push rod 52 is so housed, is in communication with the first transit path Pi1. The male thread part 54 is provided so that it surrounds the outer circumference of the push rod storage space on the opposite side X2 of the push rod protruding side of the main body tapered part 53 in the push rod longitudinal direction X. Furthermore, the male thread part 54 is capable of screwing together with a female thread part 22 of a pressure sensor connecting nut 20 along the push rod longitudinal direction X (refer to FIG. 1(b)). The main body tapered part 53 is provided at the end part of the main body on the push rod protruding side X1 in the push rod longitudinal direction X so that it surrounds the outer circumference of the push rod storage space SPi and is inclined toward the outer circumferential side and toward the opposite side X2 of the push rod protruding side in the push rod longitudinal direction X. Furthermore, the main body tapered part 53 is formed so that an angle  $\delta$  formed by an inclination direction Si1 with the push rod longitudinal direction X is greater than or equal to a prescribed angle and is less than or equal to an angle  $\beta$  formed by an inclination direction Sp of the nut tapered part 20 21 with the push rod longitudinal direction X in a state wherein the female thread part 22

of the pressure sensor connecting nut 20 and the male thread part 54 are screwed together along the push rod longitudinal direction X. In addition, if the joint 50, in cooperation with a flared copper pipe connecting nut 40 depicted in FIG. 1(e), connects a flared copper pipe 30 depicted in FIG. 1(d) with another copper piping (not shown), then the main body tapered part 53 is formed so that the angle  $\delta$  formed by the inclination direction Si1 with the push rod longitudinal direction X is greater than or equal to a prescribed angle and is less than or equal to an angle  $\gamma$  formed by an inclination direction Sf of a nut tapered part 41 with the push rod longitudinal direction X in a state wherein a female thread part 42 and a male thread part 54 are screwed together along the push rod longitudinal direction X. The fluid that comes flowing from a fluid passageway of a copper piping (not shown) which is to be connected, flows to the second transit path Pi2.

Please replace the paragraph beginning at page 21, line 19 with the following rewritten version:

When the male thread part 44 54 of a joint 40 50 and the female thread part 22 of the pressure sensor connecting nut 20 are screwed together, the end part of the push rod 52 on the push rod protruding side X1 in the push rod longitudinal direction X first comes into contact with a flat surface part formed on the pressure sensor connecting nut 20 on the opposite side X2 of the push rod protruding side of a passageway Pp in the push rod longitudinal direction X, and the push rod 52 and the steel ball 55 then begin to move against the spring force of the spring 56 toward the opposite side X2 of the push rod protruding side in the push rod longitudinal direction X.

Please replace the paragraph beginning at page 22, line 19 with the following rewritten version:

Furthermore, continuing with the screwing together of the male thread part 54 of the joint 50 and the female thread part 42 of the flared copper pipe connecting nut 40 along the push rod longitudinal direction X, the projection tapered part 52b of the push rod 52 first



makes contact with the flared part 31 of the flared copper pipe 30, and then the push rod 52 and the steel ball 55 begin to move against the spring force of the spring 56 toward the opposite side X2 of the push rod protruding side in the push rod longitudinal direction X. As a result, a passageway Pf of the flared copper pipe 30 and the first transit path Pi1 of a push rod ~~42~~ 52 communicate, and the push rod storage space SPi and the second transit path Pi2 also communicate (refer to FIG. 2(c)). Furthermore, as the screwing together progresses, the flared part 31 is interposingly pressed between the entire surface of the main body tapered part 53 and the entire surface of the nut tapered part 41, or between the push rod protruding side X1 of the main body tapered part 53 in the push rod longitudinal direction X and the push rod protruding side X1 of the nut tapered part 41 in the push rod longitudinal direction.

Please replace the paragraph beginning at page 25, line 28 with the following rewritten version:

With the joint 50 according to the previous embodiments, the push rod 52 is adopted wherein the end surface on the push rod protruding side in the push rod longitudinal direction X is flat; however, a push rod 62 may be adopted, wherein a push rod tapered part 62c is provided at the end part of the push rod on the push rod protruding side in the push rod longitudinal direction X, as depicted in FIG. 3(a). With a joint 60 of this type, a satisfactory seal state can be achieved between the push rod 62, the pressure sensor connecting nut 70, the flared copper pipe 80, and the like (refer to FIG. 3(c) and FIG. 3(e)), even if the joint 60 is connected to a pressure sensor connecting nut 70 having a shape as depicted in FIG. 3(b), or to a flared copper pipe 80 having a small diameter as depicted in FIG. 3(d). In addition, a more satisfactory seal state can be achieved between the push rod 62, the pressure sensor connecting nut 70, the flared copper pipe 80, and the like, if the push rod tapered part 62c is formed so that the angle formed by the inclination direction of the push rod tapered part 62c along the push rod longitudinal direction X is greater than or equal to a prescribed angle and is less than or equal to the angle formed by the inclination direction of a nut tapered part 71 of the pressure sensor connecting nut 70 along the push rod longitudinal direction X or the inclination direction of a flared part 81 of the flared copper pipe 80 along the push rod

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longitudinal direction X in a state wherein the female thread parts 72 of the pressure sensor connecting nut 70 and the male thread part 64 are screwed together along the push rod longitudinal direction X, or the female thread part 92 of the flared copper pipe connecting nut 90 and the male thread part 64 are screwed together along the push rod longitudinal direction X.

Please add the following new heading at page 29, between lines 1 and 2:

WHAT IS CLAIMED IS: